

WHAT IS CLAIMED IS:

1. An electronic volume device remotely controlled by a remote controller, the electronic volume device comprising:

means for receiving an i -th common volume level $Dcom[i]$ (i
5 = 1 to N) on a common scale of N steps;

means for converting received $Dcom[i]$ into a j -th unique volume level $Dvol[j]$ on a unique scale of M steps ($M < N$); and

means for controlling an attenuation factor based on the $Dvol[j]$, wherein the converting means includes:

10 means for storing an offset value $Doffset$ between the $Dcom[i]$ and the $Dvol[j]$; and

means for adjusting at least one of the $Dvol[j]$ and the $Doffset$ such that the received $Dcom[i]$ agrees with a sum of the $Dvol[j]$ and the $Doffset$, wherein the adjusting means adjusts the $Dvol[j]$
15 on a higher priority than the $Doffset$.

2. The electronic volume device as claimed in claim 1, further comprising means for previously transmitting a sum of the unique
20 volume level $Dvol[j]$ and the offset value $Doffset$ to the remote controller.

3. The electronic volume device as claimed in claim 1, wherein when the common volume level $Dcom[i]$ transmitted from the remote
25 controller is a predetermined mute level, a present offset value $Doffset$ is saved and the common volume level $Dcom[j]$ is decreased

to a predetermined level.

4. The electronic volume device as claimed in claim 3, wherein when the common volume level $D_{com}[i]$ is transmitted in a mute state, the saved offset value D_{offset} is recovered and the unique volume level $D_{vol}[j]$ is set at a sum of the transmitted $D_{com}[i]$ and the D_{offset} .

5. The electronic volume device as claimed in any one of claims 1 to 4, wherein the electronic volume device conducts radio communications with the remote controller according to a communication procedure complying with a Blue tooth standard.

6. An electronic volume device remotely controlled by a remote controller, the electronic volume device comprising:

means for managing a correspondence relationship between an i -th common volume level $D_{com}[i]$ on a common scale of N steps and a j -th unique volume level $D_{vol1}[j]$ on a unique scale of M steps;

means for receiving D_{com} from the remote controller;

means for storing the D_{com} ;

an electronic volume whose attenuation factor is controlled based on the stored D_{com} ;

a volume switch for directing D_{vol1} on the unique scale;

means for converting the directed D_{vol1} into D_{com} based on the correspondence relationship; and

means for updating the converted Dcom in the storing means.

7. The electronic volume device as claimed in claim 6, further
5 comprising means for transmitting the converted common volume level
Dcom to the remote controller.

8. The electronic volume device as claimed in claim 6,
wherein the volume switch includes a first switch for increasing
10 the unique volume level Dvol1 and a second switch for decreasing
the unique volume level Dvol1, and wherein the converting means
includes:

means for selecting Dvol1 whose corresponding common volume
level Dcom is nearest to the present Dcom on an increasing side
15 from among MDvol1s in response to an operation of the first switch;

means for selecting Dvol1 whose corresponding common volume
level Dcom is nearest to the present Dcom on a decreasing side
from among MDvol1s in response to an operation of the second switch;
and

20 means for converting the selected Dvol1 into Dcom.

9. A remote controller for remotely controlling an electronic
volume device, the remote controller comprising:

25 means for managing a correspondence relationship between
an i-th common volume level Dcom[i] on a common scale of N steps

and a k-th unique volume level Dvol2[k] on a unique scale of L steps;

means for storing a present Dcom;

a volume switch for directing Dvol2 on the unique scale;

5 means for converting the directed Dvol2 into Dcom based on the correspondence relationship;

means for updating and registering the converted Dcom in the storing means; and

means for transmitting the converted Dcom to the electronic
10 volume device.

10. The remote controller of an electronic volume device as claimed in claim 9, further comprising means for receiving the
15 common volume level Dcom from the electronic volume device and means for updating and registering the received Dcom in the storing means.

11. The remote controller of an electronic volume device
20 as claimed in claim 9, wherein the volume switch includes a first switch for increasing volume and a second switch for decreasing volume, and wherein the converting means includes:

means for selecting Dvol2 whose corresponding common volume level Dcom is nearest to the present Dcom on an increasing side
25 from among L unique volume level Dvol2s in response to an operation of the first switch;

means for selecting Dvol2 whose corresponding common volume level Dcom is nearest to the present Dcom on a decreasing side from among L Dvol2s in response to an operation of the second switch; and

5 means for converting the selected Dvol2 into Dcom.